EXHIBIT 14

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July 26, 2023

Via Electronic Mail

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Dear Counsel:

In accordance with Rule 26 and the Amended Scheduling Order dated July 21, 2023, the Veolia North America defendants ("VNA") hereby identify the following "Group A" retained experts who may be called to testify at the Bellwether 3 trial:

- 1. William Bellamy
- 2. David Crowe
- 3. Lawrence Friedman
- 4. Graham Gagnon
- 5. Samuel Lundstrom
- 6. Sheldon Masters
- 7. Robert McCaffrey
- 8. Stephen Putnam
- 9. Jamey Rosen
- 10. Nancy Segreve
- 11. David Thompson

Reports and disclosures for the above experts are available through the link included in the email accompanying this letter. The link will expire in 14 days.

VNA reserves the right to identify, and serve reports and disclosures for, additional experts responsive to plaintiffs' experts Dr. Specht and Dr. Bithoney (or his replacement). Reports and disclosures for VNA experts responsive to Dr. Specht will be served within reasonable time after Dr. Specht's deposition, expected to occur on or about September 25, 2023. Reports and

disclosures for VNA experts responsive to Dr. Bithoney (or his replacement) will be served according to the operative scheduling order deadline provided for "Group B."

VNA may also seek to introduce at trial the expert testimony of the following non-retained experts:

- 1. Miguel Del Toral
- 2. Marc Edwards, Ph.D.
- 3. Hernan Gomez, M.D.
- 4. Cristin Larder
- 5. Warren Green, P.E.

The link referenced above contains a copy of VNA's Disclosure of Expert Opinions Pursuant to Federal Rule of Civil Procedure 26(a)(2)(C). Additionally, VNA may seek to introduce testimony by any experts identified by co-defendant LAN, as cross-designated by VNA.

As to non-retained experts, with limited exceptions VNA's disclosures are based on testimony already received, and VNA believes that all parties have had a fair opportunity to examine the identified witnesses about expert opinions. With respect to the two papers published after the deposition of Dr. Edwards, VNA will not object to a deposition of Dr. Edwards related to those papers, so long as the deposition is sought within a reasonable time prior to trial. If you desire an opportunity for additional deposition testimony from other identified non-retained expert witnesses, please promptly let us know.

Sincerely,

/s/ Andreas Ringstad

Andreas Ringstad, Esquire

AR/dml

Cc: Wayne Mason, Esquire
David Kent, Esquire
Phil Erickson, Esquire
Michael Olsen, Esquire
Mark Ter Molen, Esquire
James Campbell, Esquire
Alaina Devine, Esquire

UNITED STATES DISTRICT COURT EASTERN DISTRICT OF MICHIGAN SOUTHERN DIVISION

In re FLINT WATER CASES	
	Hon. Judith E. Levy Mag. Elizabeth A. Stafford
ELNORA CARTHAN, et al.,	
Plaintiffs,	
v.	Civil Action No. 5:16-cv-10444- JEL-EAS
RICK SNYDER, et al.,	
Defendants.	

VEOLIA WATER NORTH AMERICA OPERATING SERVICES, LLC's, VEOLIA NORTH AMERICA, LLC's, AND VEOLIA NORTH AMERICA, INC.'S DISCLOSURE OF EXPERT OPINIONS PURSUANT TO FEDERAL RULE OF CIVIL PROCEDURE 26(a)(2)(C)

The Defendants Veolia Water North America Operating Services, LLC, Veolia North America, Inc., and Veolia North America, LLC, hereafter "the VNA Defendants" hereby provide the following disclosure of expert opinions pursuant to Federal Rule of Civil Procedure 26(a)(2)(C):

1. Dr. Hernan F. Gomez, MD, FACP, ACMT Hurley Medical Center 1 Hurley Plaza Flint, MI 48503 Mr. Del Toral will also testify that the MDEQ dismissed express concerns of Flint's residents, elected officials, and external subject matter experts, including those of EPA.⁵⁶

- 4. Dr. Marc Edwards, B.S., M.S., Ph.D.
 Charles Lunsford Professor of Civil & Environmental Engineering
 Department of Civil and Environmental Engineering
 Virginia Polytechnic Institute and State University
 750 Drillfield Drive
 Blacksburg, VA 24061
 - i. Subject matter on which Dr. Edwards is expected to present evidence

Dr. Marc Edwards is expected to testify that he is a civil and environmental engineer with a professional focus on drinking water treatment. Dr. Edwards is an expert in the chemistry and toxicity of urban water supplies, including human exposure, and the causes and control of lead and copper corrosion, including in aging distribution systems such as in Flint. Dr. Edwards received a Bachelor of Science in biophysics from the State University of New York at Buffalo and a Master of Science in engineering and a Ph.D. in engineering from the University of Washington. Since 1997, Dr. Edwards has been affiliated with Virginia Polytechnic Institute and State University and is presently the Charles P. Lunsford Professor of Civil and Environmental Engineering at Virginia Polytechnic Institute and State University. Dr. Edwards has published over 200 peer-reviewed articles, with 80 to

⁵⁶ *Id.* at 116:17-21; 121:10-122:9.

90 percent of those articles focusing on the LCR.⁵⁷ Dr. Edwards' curriculum vitae is attached hereto as Exhibit C.

Dr. Edwards has received numerous accolades, including a MacArthur Fellowship, the Praxis Award in Professional Ethics from Villanova University, and a National Science Foundation Presidential Faculty Fellowship from the White House. For his work related to Flint, TIME named Dr. Edwards as one of the world's most influential people. In addition, a class on engineering ethics co-developed by Dr. Edwards was recognized as an outstanding ethics education exemplar by the National Academy of Engineering.

Since 2015, Dr. Edwards has focused on the identification and analysis of lead contamination in Flint, including human exposure. His work in Flint has involved coordinating sampling for lead and other contaminants, publishing, compiling, and analyzing test results and publications related to the Flint Water Crisis on his Flint Water Study website, identifying governmental misconduct, and advising on the quality of Flint's drinking water and associated human exposure. The factual bases for Dr. Edwards' opinions are his own personal knowledge, observations, research, communications, and interactions.

Dr. Edwards was deposed in this case on August 7, 10, and 11, 2020. Dr. Edwards has also testified in related proceedings, including before Congress.

⁵⁷ Edwards Dep. 191:7-191:14 (August 7, 2020).

Dr. Edwards is a co-author of the following studies and publications:

- 1. Siddhartha Roy, et al., Lead release to potable water during the Flint, Michigan water crisis as revealed by routine biosolids monitoring data (Water Research 160, 2019)
- 2. Siddhartha Roy & Marc A. Edwards, Efficacy of corrosion control and pipe replacement in reducing citywide lead exposure during the Flint, MI water system recovery (Environmental Science: Water Research & Technology, 2020)
- 3. Siddhartha Roy & Marc A. Edwards, Are there excess fetal deaths attributable to waterborne lead exposure during the Flint Water Crisis? Evidence from bio-kinetic model predictions and Vital Records (Journal of Exposure Science & Environmental Epidemiology, 2022)

Dr. Edwards is expected provide testimony and opinions consistent with the above studies and publications. Dr. Edwards is also expected to testify consistent with his deposition testimony and exhibits used therein dated August 7, 10, and 11, 2020.

Dr. Edwards is expected to testify about his education, background, and experience, and expert work specifically in drinking water treatment, human exposure, and lead and copper corrosion issues. ⁵⁸ Dr. Edwards will testify regarding the causes of the Flint Water Crisis, which, in Dr. Edwards' opinion, included the switch in water sources from the Detroit Water and Sewerage Department ("DWSD") to the Flint River without maintaining optimized corrosion control treatment. Dr. Edwards is expected to testify, based on his personal knowledge, observations, experience, and research, about the timing, source, and degree of corrosion and lead release in Flint in 2014 and 2015, including as compared to years

⁵⁸ *Id.* at 25:22-31:1.

leading up to the Flint Water Crisis and to Dr. Edwards' work in Washington, D.C. Dr. Edwards will also testify about his knowledge of and experience with the governmental agencies and their implementation of the federal LCR, including at the MDEO and the EPA. Dr. Edwards will testify regarding the MDEO and EPA's faulty interpretation and implementation of the LCR in Flint during 2014 and 2015 and their efforts to cover-up their errors at the detriment of the health and safety of Flint residents.⁵⁹

- ii. Summary of the facts and opinions to which Dr. Edwards is expected to testify
- Facts and opinions set forth at deposition 1.

Dr. Edwards is expected to testify regarding the purpose and intent of the EPA's LCR, including the protection of public health and minimizing the exposure of lead in a drinking water supply. 60 Dr. Edwards will testify, consistent with his background and experience, that the primary function of the MDEQ and EPA is protecting the health and welfare of the public.⁶¹ Dr. Edwards is expected to testify that the LCR, and MDEQ's own policy on this topic, required large water systems, including Flint, to operate and maintain optimal corrosion control treatment.⁶² Dr. Edwards is expected to opine that MDEQ's interpretation of the LCR, including that

⁵⁹ *Id.* at 183:16-189:21. ⁶⁰ *Id.* at 191:15-23; 195:11-198:19.

⁶¹ *Id.* at 194:17-195:9.

⁶² *Id.* at 218:12-226:1; 227:17-232:16.

the City of Flint could wait up to five years before implementing optimized corrosion control treatment, has no legitimate justification and constitutes a deliberate indifference to the rights of Flint citizens. 63 Dr. Edwards will also testify that the EPA had an "absolute" duty to act when it learned that the MDEQ wasn't taking action, but it did not do so because it had a "corrupt" culture going back at least 12 years, making the Flint Water Crisis "inevitable." 64 Dr. Edwards will also testify that the MDEQ dismissed express concerns of Flint's residents, elected officials, and external subject matter experts, including Dr. Edwards and his team.

Dr. Edwards will opine that the MDEQ and EPA bear primary responsibility for the water contamination in Flint. He will opine that MDEQ misinterpreted and misapplied the LCR, leading to under-reporting of lead in water levels and excess lead levels. Dr. Edwards will testify that the Flint Water Crisis is one of the "most horrific betrayals of public trust and public welfare" and an "abuse of power" by the MDEQ and the EPA.⁶⁵ Dr. Edwards will testify that the MDEQ and EPA's application of the LCR, and their defense of the application, was "illegal" and "gaming the system," thereby creating unnecessary risks for Flint residents. 66 Dr. Edwards will opine that the EPA was "less than worthless" in applying the LCR,

⁶³ *Id.* at 233:7-237:20; 249:14-250:8. ⁶⁴ *Id.* at 183:16-189:21.

⁶⁵ *Id.* 273:15-275:8; 303:18-304:23.

⁶⁶ *Id.* at 201:2-210:14.

protecting the health and safety of Flint residents, and going out of their way to silence his work and the work of EPA scientist Miguel Del Toral.⁶⁷ Dr. Edwards will specifically cite the lack of qualified staff at the Flint water treatment plant necessary to treat the Flint River for corrosion control and the failure to study the Flint River water quality before the switch occurred in April 2014 without corrosion control treatment in place.⁶⁸ Moreover, based on his own review of the data and information, Dr. Edwards is expected to testify that due to flawed sampling techniques, the City of Flint's lead and copper data from 2014 and 2015 is completely untrustworthy and unreliable.⁶⁹ Dr. Edwards will also testify that the lead and copper samples taken at the home of Flint resident LeeAnne Walters beginning in February 2015—which were known to the City of Flint, MDEQ, and EPA but not shared with the VNA Defendants—showed that there was a series lead issue at Ms. Walters' home warranting further investigation.⁷⁰

Dr. Edwards will opine that lead levels in biosolids collected as part of regular monitoring at the City of Flint's Water Pollution Control Plant can be used to provide reliable estimates of water lead levels in Flint. For example, Dr. Edwards will testify that "[i]n Flint, officials have been sampling biosolids monthly for over 25 years"

⁶⁷ *Id.* at 275:9-276:19; 277-18-278:18; 622:6-626:20.

⁶⁸ *Id.* at 199:1-200:19; 276:23-277:16; 300:7-301:12.

⁶⁹ *Id.* at 458:23-461:14.

⁷⁰ *Id.* at 263:18-271:9

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⁶⁸ *Id.* at 199:1-200:19; 276:23-277:16; 300:7-301:12.

⁶⁹ *Id.* at 458:23-461:14.

⁷⁰ *Id.* at 263:18-271:9

and that monitoring biosolids is an accurate methodology for "monitor[ing] public health, including viral disease markers, illicit drug consumption patterns, and human gut microbiome shifts."⁷¹ Dr. Edwards will testify that biosolids analysis also works to accurately estimate the amount of lead in Flint's water before and during the Flint Water Crisis—and indeed that this biosolids analysis, when combined with his teams' citywide testing, was more reliable than the City of Flint's Lead and Copper Rule monitoring samples because his approach gives an accurate estimate of "average lead in water exposure across the city . . . not just the homes with lead pipes."⁷² Dr. Edwards will testify that he evaluated lead levels in Flint in the years leading up to the switch to the Flint River in 2014, and both during and after the Flint Water Crisis, including through both water samples and biosolids analysis.⁷³ Dr. Edwards is expected to testify that there was a spike in monthly lead in biosolids. reaching a peak of 24.5 kilograms during the warmer months (May-October) of the crisis in 2014, but lead release steadily declined thereafter to less than half that value, 11.5 kilograms, for the same period in 2015.⁷⁴

Dr. Edwards will also testify that the average maximum biosolids lead measurements during the Flint water Crisis in 2015 were comparable to those pre-

⁷¹ Siddhartha Roy and Marc Edwards, *From Sewage Sludge, a New Perspective on the Flint Water Crisis*, Undark Magazine, Sept. 17, 2020, https://undark.org/2020/09/17/flint-water-crisis-sewage/

⁷² Edwards Dep. 452:23-453:3

⁷³ *Id.* at 252:7-261:22.

⁷⁴ *Id*.

Flint water Crisis in the summer of 2012 and 2013.⁷⁵ Dr. Edwards will testify that his analysis suggests that the worst lead exposure during the Flint Water Crisis was restricted to June-October 2014.⁷⁶

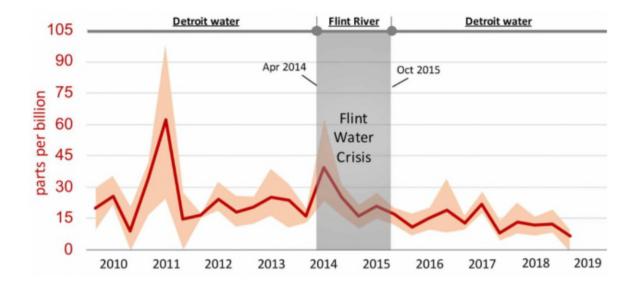
Put simply, Dr. Edwards will testify that "lead levels in the water were not as bad as first feared: Water lead levels did increase sharply during the first few months of the water crisis [from April 2014 through approximately August 2014], but for most of the time the city was receiving its water from the Flint River, the average levels of lead in drinking water were indistinguishable from those before the [April, 2014] switch" to the Flint River, as reflected in the below chart that Dr. Edwards prepared along with Siddhartha Roy, the co-author of his biosolids studies.⁷⁷

⁷⁵ *Id*.

 $^{^{76}}$ Id

⁷⁷ Siddhartha Roy and Marc Edwards, *From Sewage Sludge, a New Perspective on the Flint Water Crisis*, Undark Magazine, Sept. 17, 2020, https://undark.org/2020/09/17/flint-water-crisis-sewage/; see also Edwards Dep. 502:7-14 ("[T]he initial fears about how widespread the elevations in blood lead were . . . do not appear to be supported by the scientific data. . . . [The data] show an elevation that occurred in the few months after the switch, but nothing above what was considered normal . . . after those first few months.")

Water Lead Levels in Flint, Michigan



Water lead levels estimated from biosolids samples. The red line indicates mean 90th percentile water lead levels, averaged over four months. The highlighted range captures the minimum and maximum water lead levels over each averaging period.

Visual: Siddhartha Roy and Marc Edwards

Dr. Edwards will testify that there was a spike in water lead levels, as established by Dr. Edward's biosolids analysis, in Flint in 2011 that was higher than at any subsequent point, including during the Flint Water Crisis. 78 Dr. Edwards will opine that the cause of any increase in water lead levels in Flint in 2014 was likely from the sloughing of lead particulate in scale and that it was not a problem with soluble lead. 79 Finally, Dr. Edwards is expected to testify that lead pipe replacement efforts underway in Flint have reduced lead exposure in Flint by 72 to 84 percent of

⁷⁸ *Id.* at 261:23-262:15.

⁷⁹ *Id.* at 467:10-469:7; 436:3-437:10; 438:10-440:24.

pre-switch levels, and that lead levels in Flint are presently lower than many other cities in Michigan.⁸⁰

- 2. Facts and opinions set forth in publications co-authored by Dr. Edwards
 - a. Siddhartha Roy, et al., Lead release to potable water during the Flint, Michigan water crisis as revealed by routine biosolids monitoring data (Water Research 160, 2019)

Dr. Edwards is expected to testify consistent with the background, methods, results, and conclusions of the 2019 study titled, "Lead release to potable water during the Flint, Michigan water crisis as revealed by routine biosolids monitoring data." Dr. Edwards is expected to testify that he was a primary researcher and author of this study.

Dr. Edwards is expected to testify that this study explored the hypothesis that routine monthly analysis of metal mass in biosolids (i.e., digested sewage sludge) at the Flint wastewater treatment plant represents a composite sample tracking the mass of metal release from plumbing to the Flint water distribution system. He is expected to testify that in this study water temperature data, trends in elevated blood lead ≥ 5 mg/dL ("%EBL5") for children under six years of age within the City of Flint, MI, and pre-existing data on metal concentrations in biosolids were used in a retrospective ecological study analyzed for three periods corresponding to May

⁸⁰ *Id.* at 311:20-314:3; 319:3-323:9.

2011-April 2014 ("pre-FWC"), May 2014-October 2015 ("during Flint Water Crisis (FWC)") and November 2015- November 2017 ("post-FWC").

Dr. Edwards is expected to testify and provide opinions relating to the conclusions of this study that (1) plumbing-related metals, including lead, were strongly correlated with one another in monthly sewage biosolids monitoring data during 2011-17, especially during the FWC months of April 2014-October 2015; (2) the plumbing related metals Cu, Zn and Pb were also correlated with one another in calculated weighted averages of first, second and third draw, in five rounds of Virginia Tech and USEPA drinking water monitoring data; (3) biosolids lead strongly correlated with citywide water lead levels in Virginia Tech's sampling from August 2015 to August 2017; (4) during the FWC, the increased biosolids lead mass was just 14% higher than the comparable 18-month time period pre-FWC, but most (76%) of that increased mass was in the months of July-September 2014; (5) during those three months %EBL5 was nearly doubled (p < 0.05) during FWC versus pre-FWC, but was not significantly higher in the other months of the FWC; (6) biosolids lead was very weakly correlated with %EBL5 pre-FWC and during the FWC, and not at other time periods, consistent with the expectation that water lead exposure is not strongly correlated to blood lead; (7) lead filters and bottled water severed the link between biosolids lead and %EBL5, consistent with public health protections of Flint consumers during the Federal Emergency; (8) exposure to elevated water lead during the FWC was predominantly associated with a large lead release that occurred during summer 2014, as evidenced by high lead in biosolids and %EBL5 in children. This is consistent with prior research based only on %EBL5; (9) summer spikes of water lead levels ("WLL") occurred when orthophosphate was not added to water in 2014 and 2015, but not in pre-FWC or post-FWC summer months when orthophosphate was being dosed; (10) higher orthophosphate dosages resulted in lower WLLs and biosolids lead levels, demonstrating the effectiveness of increased phosphate dosing; (11) biosolids lead monitoring may provide unique insights to effectiveness of lead corrosion control and citywide exposure risks; and (12) biosolids lead and predicted human water lead exposures, during the 2014-2015 FWC, were in the range of what occurred in 2011.

b. Siddhartha Roy & Marc A. Edwards, Efficacy of corrosion control and pipe replacement in reducing citywide lead exposure during the Flint, MI water system recovery (Environmental Science: Water Research & Technology, 2020)

Dr. Edwards is expected to testify consistent with the background, methods, results, and conclusions of the 2020 study titled, "Efficacy of corrosion control and pipe replacement in reducing citywide lead exposure during the Flint, MI water system recovery." Dr. Edwards is expected to testify that he was a primary researcher and author of this study.

Dr. Edwards is expected to testify that data on the monthly lead mass captured in sewage sludge (or, biosolids) at the Flint wastewater treatment plant has important

advantages compared to official WLL monitoring data collected under the LCR, including: (1) biosolids samples represent a composite of all lead released to Flint's potable water over a several week time period, (2) the sampling methodology and location have remained the same for over a decade, and (3) this data has been collected by entities who are independent of those engaged in measuring water lead in homes. Dr. Edwards is further expected to testify that, in contrast, the official 90th percentile WLL only measures lead in the first liter from the tap (i.e., "first draw"), has used first draw sampling protocols that have changed substantially in the last few years, and is calculated from sampling pool of only 60–200 "high risk" homes with lead pipe that has been changing as lead service lines (LSLs) are replaced. Dr. Edwards is expected to testify that in this paper the authors analyzed the data on biosolids monitoring and elevated blood lead in children (January 2018– June 2019), which reflects a time period of unprecedented replacement of lead bearing (i.e., lead and galvanized iron) service line pipe replacements.

Dr. Edwards is expected to testify and provide opinions relating to the conclusions of this study that (1) lead in biosolids reached a historical low in 2019, due to enhanced corrosion control and replacement of 80% of the lead and galvanized iron service pipes in Flint; (2) estimated composite water lead levels (i.e., equally weighted first draw and second draw or service line WLLs) in 2019 have dropped 90% and 83% from worst levels seen before (2011) and during the Flint

Water Crisis (2014), respectively; (3) official LCR 90th percentile first draw WLLs and independent WLLs, in 2016–19, were in good agreement with those predicted using a previously calibrated regression model relying on independent biosolids lead; (4) the mean percentage of children ≤6yo with elevated blood lead (% EBL5) in the latest months (May 2017–June 2019) is at a historic low, and is 63% lower than that observed during the height of the FWC in summer 2014; (5) there is no correlation between % EBL5 and biosolids lead mass in the 44 months post-FWC (November 2015–June 2019), supporting the reasonable expectation of low consumer water lead exposure during this time of bottled water and lead filters; and (6) the biosolids data support official data, that lead levels in Flint water are dropping, and do not support unfounded assertions that Flint water still has "crisis" levels of lead in water.

c. Siddhartha Roy & Marc A. Edwards, Are there excess fetal deaths attributable to waterborne lead exposure during the Flint Water Crisis? Evidence from bio-kinetic model predictions and Vital Records (Journal of Exposure Science & Environmental Epidemiology, 2022)

Dr. Edwards is expected to testify consistent with the background, methods, results, and conclusions of the 2022 study titled, "Are there excess fetal deaths attributable to waterborne lead exposure during the Flint Water Crisis? Evidence from bio-kinetic model predictions and Vital Records." Dr. Edwards is expected to testify that he was a primary researcher and author of this study.